

Trend Study 14-30-99

Study site name: Milk Ranch Point .

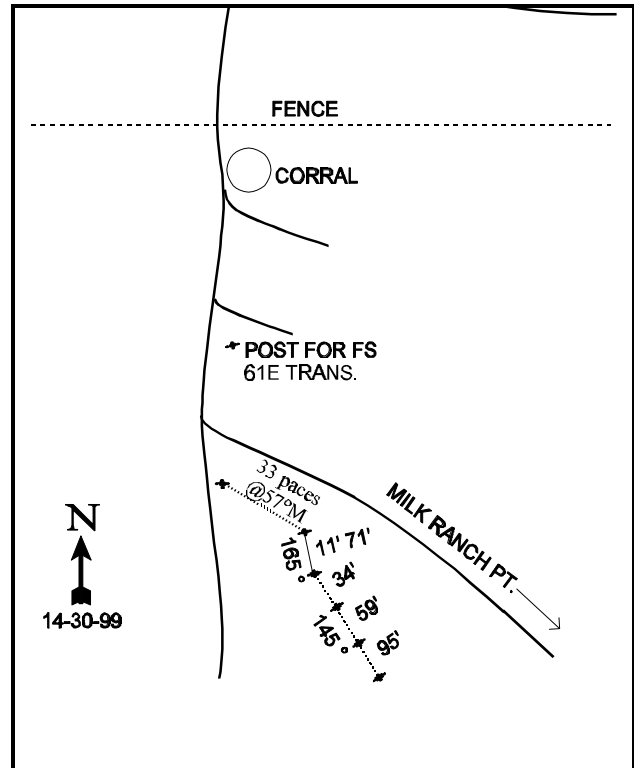
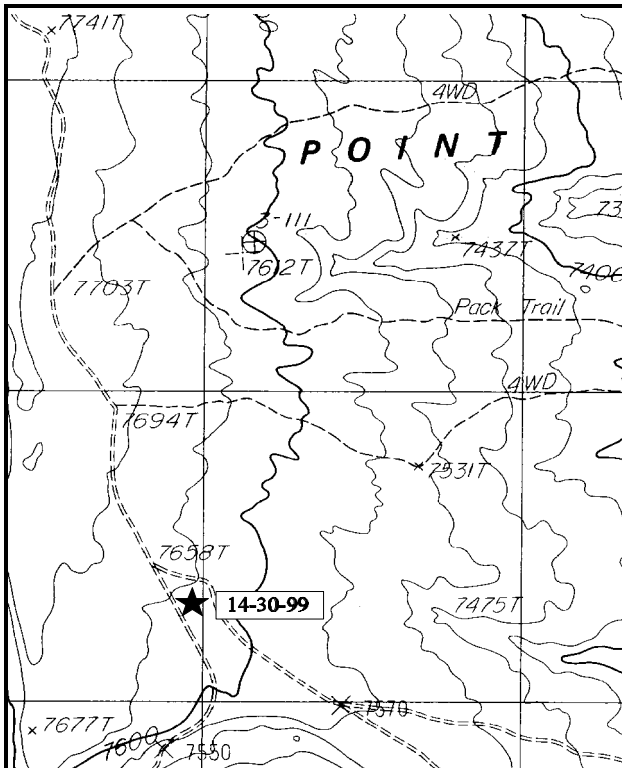
Range type: Mixed Mountain Brush .

Compass bearing: frequency baseline 165°M.

Footmark (first frame at) 5 feet, footmarks (frequency belts) line 1 (11 & 71ft), line 2 (34ft), line 3 (59ft), line 4 (95ft).

LOCATION DESCRIPTION

From Forest Service Road # 92, turn south onto Milk Ranch Point road. Drive 0.8 miles to a cattleguard. Continue 2.6 miles to a witness post. From the witness post, walk 33 paces at 57°M to the 0-foot stake. The 200'-400' stakes are at a bearing of 145°M.



Map Name: Cream Pots

Diagrammatic Sketch

Township 36S , Range 20E , Section 29

UTM 4165242.883 N, 611010.909 E

## DISCUSSION

### Trend Study No. 14-30 (36-18)

The Milk Ranch Point site is a new study located on a essentially level bench called Milk Ranch Point. Elevation is 7,600 feet with an eastern aspect where the bench drops off to the south to low Pinyon-Juniper and sagebrush mesas above Arch Canyon. The site was originally plowed and seeded in 1953. The Forest Service and DWR have discussed the possibility of retreating the area with fire. There are many stock ponds along the bench which contained water in 1992 due to an exceptionally wet August. The major use for the area is cattle grazing and elk winter and/or transition range. Cattle use the area as part of the Babylon allotment which is grazed from June 1 to Oct 15 by 205 head. Pellet group data from 1999 estimate 11 deer days use/acre (27 ddu/ha), 1 elk days use/acre (2 edu/ha), and 6 cow days use/acre (15 cdu/ha). All pellet groups appeared to be from the previous season.

Soil is very sandy, fairly shallow, and compact. Effective rooting depth is variable, but averages just over 14 inches through the site. Soil texture is a sandy loam with a neutral pH (6.7). Parent material is sandstone. There are a few rocks strewn over the surface with very little pavement present. There is evidence that soil erosion has taken place, as evidenced by plant pedestaling, especially for the shrubs. There is also an active gully near the site.

This mountain brush community is dominated by serviceberry, mountain big sagebrush, and Gambel oak. The serviceberry is large and some are tall enough to be partly unavailable. It provided 50% of the browse cover in 1992 with an estimated population of 3,800 plants/acre. Seedlings and young plants were numerous. Density declined to 980 plants/acre in 1999, primarily due to a dramatic reduction in young plants. It still provides 45% of the browse cover however. Utilization was light to moderate in 1992, then categorized as moderate to heavy in 1999. Mountain big sagebrush has a stable population of about 1,500 plants/acre. It displayed light to moderate use in both 1994 and 1999. Gambel oak provided 20% of the browse cover in 1992 with a population of 1,620 stems/acre. Utilization was light to moderate with good vigor. By 1999, density remained relatively stable with only light use. Pinyon and juniper trees are found throughout the site. Most of the mature trees are about 15 to 20 feet in height. Point quarter data from 1999 estimate 84 pinyon and 20 juniper trees/acre. Average diameter of pinyon was 3.5 inches and that of juniper 4.5 inches.

The herbaceous understory is diverse, with 9 grass species and 32 forb species sampled in 1999. Seeded grasses, crested wheatgrass and intermediate wheatgrass, dominate the grass composition. They made up 61% of the grass cover in 1992 and 60% in 1999. The only other common grass is mutton bluegrass which currently provides 30% of the grass cover. Forbs are more abundant than grasses and provide twice as much cover. There are many useful and preferred species present including arrowleaf balsamroot, Indian paintbrush, winged eriogonum, redroot eriogonum, thistleleaf peavine, silvery lupine, and several species of penstemon. Currently, arrowleaf balsamroot, silvery lupine, Washington lupine, and rock goldenrod, dominate the forb composition by providing 72% of the forb cover.

### 1992 APPARENT TREND ASSESSMENT

With high species diversity and good vegetative cover, the trend for this site at this time would be considered stable. All the key browse species for the site have excellent vigor with very good biotic potentials and age class structures. Trend for browse appears stable and in excellent condition. The herbaceous understory is also in very good condition with 10 species of grasses and 22 species of forbs on the site.

### 1999 TREND ASSESSMENT

Trend for soil is down slightly. Percent cover of vegetation and litter have declined slightly while percent cover for bare ground has increased from 19% to 26%. Cryptogamic cover has also decreased from 7% to

3%. There is some erosion occurring on the site, but it is slight due to the gentle terrain. Density of serviceberry has declined from 3,800 to 980 plants/acre. Most of the change is due to a reduction in the number of young sampled. Cover also declined from 16% to 11% and use was heavier with 35% of the plants sampled displaying heavy browsing. Mountain big sagebrush and Gambel oak appear to have stable populations. Since serviceberry provides nearly half of the shrub cover, the browse trend is considered down slightly. Trend for the herbaceous understory is mixed. Sum of nested frequency of grasses has remained stable. Nested frequency of crested wheatgrass increased significantly since 1992, while frequency of intermediate wheatgrass declined significantly. This appears to be a response to drought conditions which occurred in this area during the late 1990's, since crested wheatgrass is more drought tolerant than intermediate wheatgrass, its nested frequency value increased. Sum of nested frequency of forbs declined. Since forbs are more abundant and produce more cover than grasses, overall trend for the herbaceous understory is considered down slightly but still in good condition.

#### TREND ASSESSMENT

soil - down slightly

browse - down slightly, especially for serviceberry

herbaceous understory - down slightly

#### HERBACEOUS TRENDS --

Herd unit 14 , Study no: 30

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'92	'99	'92	'99	'92	'99
G	Agropyron cristatum	59	*95	21	34	.43	1.48
G	Agropyron intermedium	173	*127	55	41	5.66	2.98
G	Bouteloua gracilis	4	4	2	1	.15	.03
G	Carex spp.	17	10	7	4	.39	.24
G	Koeleria cristata	7	5	2	1	.30	.03
G	Oryzopsis hymenoides	4	*19	3	9	.04	.29
G	Poa bulbosa	-	6	-	2	-	.01
G	Poa fendleriana	71	99	29	37	2.89	2.20
G	Poa pratensis	2	-	1	-	.03	-
G	Sitanion hystrix	9	-	2	-	.03	-
G	Stipa columbiana	3	4	1	1	.03	.15
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		349	369	123	130	9.97	7.43
Total for Grasses		349	369	123	130	9.97	7.43
F	Agoseris glauca	-	*7	-	5	-	.12
F	Androsace septentrionalis (a)	-	3	-	1	-	.00
F	Arabis spp.	-	2	-	1	-	.00
F	Balsamorhiza sagittata	46	*89	24	39	2.50	4.48
F	Castilleja linariaefolia	59	*38	26	19	.87	.46
F	Collinsia parviflora (a)	-	2	-	1	-	.00
F	Crepis acuminata	10	22	5	9	.12	.30

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'92	'99	'92	'99	'92	'99
F	Cryptantha spp.	44	*-	11	-	1.86	-
F	Cymopterus spp.	-	*6	-	4	-	.05
F	Eriogonum alatum	102	*51	35	24	2.23	.48
F	Erigeron eatonii	18	9	9	5	.39	.07
F	Erigeron pumilus	16	14	8	6	.13	.05
F	Eriogonum racemosum	43	30	18	15	.56	.19
F	Euphorbia spp.	-	2	-	1	-	.00
F	Gilia aggregata	5	-	2	-	.01	-
F	Haplopappus acaulis	-	1	-	1	-	.00
F	Hymenoxys acaulis	95	*37	41	18	.90	.45
F	Ipomopsis aggregata	-	6	-	2	-	.18
F	Lathyrus lanszwertii	7	1	3	1	1.00	.03
F	Lesquerella spp.	98	63	45	30	.54	.30
F	Lupinus argenteus	79	96	33	40	2.85	2.36
F	Lupinus polyphyllus	6	*41	2	16	.03	1.72
F	Microsteris gracilis (a)	-	1	-	1	-	.00
F	Penstemon lentus	68	*30	29	14	.37	.28
F	Penstemon pachyphyllus	-	*27	-	10	-	1.10
F	Petradoria pumila	58	*35	21	15	2.45	1.73
F	Penstemon strictus	6	14	4	6	.04	.05
F	Phlox longifolia	77	72	32	28	.43	.23
F	Polygonum douglasii (a)	60	*1	30	1	.22	.00
F	Senecio integerrimus	-	3	-	1	-	.03
F	Senecio neomexicanus	25	16	11	9	.10	.07
F	Taraxacum officinale	-	4	-	2	-	.03
F	Unknown forb-perennial	3	-	2	-	.01	-
F	Vicia americana	-	2	-	1	-	.00
F	Zigadenus paniculatus	-	2	-	1	-	.00
Total for Annual Forbs		60	7	30	4	0.22	0.01
Total for Perennial Forbs		865	720	361	323	17.46	14.89
Total for Forbs		925	727	391	327	17.69	14.91

\* Indicates significant difference at % = 0.10

## BROWSE TRENDS --

Herd unit 14 , Study no: 30

Type	Species	Strip Frequency		Average Cover %	
		'92	'99	'92	'99
B	Amelanchier utahensis	41	36	16.15	11.07
B	Artemisia tridentata vaseyana	48	47	4.74	4.58
B	Chrysothamnus depressus	40	28	.28	.28
B	Gutierrezia sarothrae	44	20	1.19	.10
B	Juniperus osteosperma	1	0	.63	.15
B	Pinus edulis	6	5	2.55	2.09
B	Purshia tridentata	5	4	.41	.03
B	Quercus gambelii	19	16	6.48	6.48
B	Symphoricarpos oreophilus	2	0	-	-
Total for Browse		206	156	32.46	24.80

## CANOPY COVER --

Herd unit 14 , Study no: 30

Species	Percent Cover '99
Amelanchier utahensis	1
Pinus edulis	4
Quercus gambelii	6

## BASIC COVER --

Herd unit 14 , Study no: 30

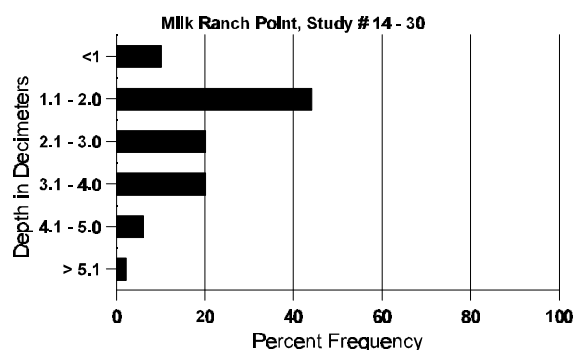
Cover Type	Nested Frequency		Average Cover %	
	'92	'99	'92	'99
Vegetation	389	379	47.50	44.46
Rock	30	54	2.67	.96
Pavement	30	91	0	1.31
Litter	305	465	52.97	50.88
Cryptogams	112	111	6.70	3.27
Bare Ground	219	277	18.52	26.10

## SOIL ANALYSIS DATA --

Herd Unit 14, Study # 30, Study Name: Milk Ranch Point

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
14.3	61.4 (16.6)	6.7	58.0	23.4	18.6	1.5	3.4	108.8	0.6

## Stoniness Index



### PELLET GROUP FREQUENCY --

Herd unit 14 , Study no: 30

Type	Quadrat Frequency		Pellet Transect Days Use/Acre (ha)
	'92	'99	
Rabbit	29	44	N/A
Elk	2	-	1 (2)
Deer	5	12	11 (27)
Cattle	-	1	6 (15)

### BROWSE CHARACTERISTICS --

Herd unit 14 , Study no: 30

A Y G R E	Form Class (No. of Plants)										Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total	
	1	2	3	4	5	6	7	8	9	1	2	3	4					
Amelanchier utahensis																		
S	92	31	1	-	25	-	-	104	-	-	161	-	-	-	3220		161	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	92	15	30	-	19	-	-	66	-	-	113	13	4	-	2600		130	
	99	2	2	1	3	-	-	-	-	-	8	-	-	-	160		8	
M	92	18	23	9	2	-	1	5	-	-	37	18	3	-	1160	-	58	
	99	7	10	11	4	3	2	1	-	2	39	1	-	-	800	53	40	
D	92	1	1	-	-	-	-	-	-	-	-	1	1	-	40		2	
	99	-	-	-	-	-	1	-	-	-	-	-	-	1	20		1	
% Plants Showing		<u>Moderate Use</u>					<u>Heavy Use</u>					<u>Poor Vigor</u>					<u>%Change</u>	
'92		28%					05%					04%					-74%	
'99		31%					35%					02%						
Total Plants/Acre (excluding Dead & Seedlings)												'92	3800	Dec:	1%			
												'99	980		2%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	92	4	-	-	-	-	-	1	-	-	5	-	-	-	100		5	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	92	17	6	-	5	-	-	1	-	-	29	-	-	-	580		29	
	99	3	5	-	-	-	-	-	-	-	8	-	-	-	160		8	
M	92	13	9	4	2	1	-	3	-	-	31	-	1	-	640	-	32	
	99	38	11	3	-	-	-	-	-	-	52	-	-	-	1040	18	52	
D	92	7	8	-	-	-	-	-	-	-	11	-	-	4	300		15	
	99	14	-	-	1	-	-	-	-	-	5	-	-	10	300		15	
X	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	180		9	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'92		32%			05%			07%			- 1%							
'99		21%			04%			13%										
Total Plants/Acre (excluding Dead & Seedlings)												'92	1520	Dec:	20%			
												'99	1500		20%			
Chrysanthamnus depressus																		
S	92	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	92	28	5	1	8	-	-	-	-	-	42	-	-	-	840		42	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	92	16	10	2	7	-	-	-	-	-	33	-	2	-	700	-	35	
	99	35	3	4	2	-	-	-	-	-	44	-	-	-	880	3	44	
D	92	1	2	-	-	-	-	-	-	-	2	-	-	1	60		3	
	99	2	-	-	-	-	-	-	-	-	-	-	-	2	40		2	
X	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'92		21%			04%			04%			-43%							
'99		07%			09%			04%										
Total Plants/Acre (excluding Dead & Seedlings)												'92	1600	Dec:	4%			
												'99	920		4%			
Gutierrezia sarothrae																		
S	92	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	92	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	92	104	-	-	2	-	-	-	-	-	105	-	1	-	2120	-	106	
	99	34	-	-	-	-	-	-	-	-	34	-	-	-	680	6	34	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'92		00%			00%			.92%			-66%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'92	2160	Dec:	-			
												'99	740					

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Juniperus osteosperma																	
Y	92	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'92			00%			00%			00%						
		'99			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'92	20	Dec:	-		
												'99	0		-		
Pinus edulis																	
S	92	1	-	-	3	-	-	3	-	-	7	-	-	-	140		7
	99	-	-	-	-	-	-	1	-	-	1	-	-	-	20		1
Y	92	3	-	-	-	-	-	1	-	-	4	-	-	-	80		4
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
M	92	1	-	-	-	-	-	-	1	-	2	-	-	-	40	-	2
	99	-	-	-	-	-	-	1	-	1	2	-	-	-	40	-	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'92			00%			00%			-17%						
		'99			00%			20%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'92	120	Dec:	-		
												'99	100		-		
Purshia tridentata																	
Y	92	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
M	92	-	1	2	-	-	-	-	-	-	3	-	-	-	60	-	3
	99	1	1	1	-	-	-	-	-	-	3	-	-	-	60	13	33
D	92	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'92			40%			60%			-20%						
		'99			25%			25%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'92	100	Dec:	20%		
												'99	80		0%		
Quercus gambelii																	
S	92	2	-	-	1	-	-	16	-	-	18	1	-	-	380		19
	99	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4
Y	92	2	-	-	17	-	-	15	-	-	29	5	-	-	680		34
	99	20	-	-	10	-	-	-	-	-	30	-	-	-	600		30
M	92	16	15	-	1	6	-	9	-	-	42	5	-	-	940	-	47
	99	34	-	-	-	-	-	-	-	-	34	-	-	-	680	47	39
X	92	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
		'92			26%			00%			-21%						
		'99			00%			00%			00%						
Total Plants/Acre (excluding Dead & Seedlings)												'92	1620	Dec:	-		
												'99	1280		-		



A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Symphoricarpos oreophilus																	
Y	92	-	-	-	-	-	-	7	-	-	7	-	-	-	140		7
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
D	92	1	-	-	-	-	-	-	-	-	-	-	-	1	20		1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'92		00%			00%			13%									
'99		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)														'92	160	Dec:	13%
														'99	0		0%